

**B.Tech. SEM -VI Production 2014 Course (CBCS) : WINTER -
2017**

SUBJECT : COMPUTER AIDED DESIGN & MANUFACTURING

Day : **Wednesday**
Date : **22/11/2017**

Time : **10.00 AM TO 01.00 PM**
Max. Marks : **60**

W-2017-2235

N.B.:

- 1) All questions are **COMPULSORY**.
 - 2) Figures to the right indicate **FULL** marks.
 - 3) Draw neat and labeled diagrams **WHEREVER** necessary.
 - 4) Assume suitable data if necessary.
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Q.1 a) What do you understand by CAD/CAM? How the conventional product cycle is different from product cycle with CAD/CAM? **[05]**

b) What is concatenated transformation? **[05]**

OR

a) Explain in detail the image generation process in computer graphic. **[05]**

b) Explain the following homogeneous transformations: **[05]**
i) Scaling **ii)** Reflection about line $y = x$

Q.2 a) What are the types of wireframe entities? Explain any two examples of analytical curves. **[05]**

b) What do you understand by surface modeling? Explain how the surfaces are represented mathematically. **[05]**

OR

a) Explain in detail the Bezier curves. **[05]**

b) Explain the meaning of solid modeling. Also explain the geometry and topology in relation with solid modeling. **[05]**

Q.3 a) Explain in detail OPITZ classification. **[05]**

b) Describe the various strategies to be selected for automation. **[05]**

OR

a) Explain in detail the composite part concept of Group technology. **[05]**

b) What is FMS? Discuss the subsystems of FMS. Also explain the scope of FMS. **[05]**

Q.4 a) Describe ESPRIT – CIM OSA model. **[05]**

b) What do you understand by rapid product development and manufacturing? **[05]**

P.T.O.

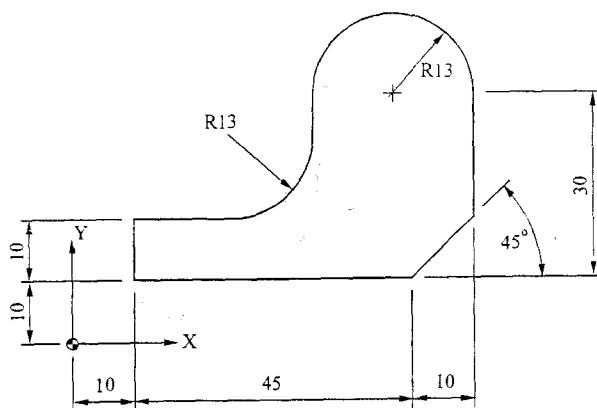
OR

- a) With the help of block diagram explain the NIST-AMRF hierarchical model. [05]
- b) What is CIM? Explain the IBM concept of CIM. [05]

- Q.5**
- a) With neat diagram, explain the open loop and close loop system in CNC machine tool. [05]
 - b) What are the types of manual part programming? Explain with example the word address format. [05]

OR

- a) Give the significance of following codes: [02]
G80, G70, G41, M00, M08.
- b) Write a NC part program to machine a component by using G and M code to cut the component shown in figure by using an end mill of 6mm diameter. Assume suitable data for machining parameters. Raw material size 75 mm × 75 mm × 5 mm. [08]



All dimensions are in mm.

- Q.6**
- a) What is computer aided process planning? Explain the information required for process planning. [05]
 - b) What is CAD based process planning? [05]

OR

- a) Describe in detail the operation of a typical computer aided process planning software. [050]
- b) Explain with neat sketch the variant approach of process planning. [05]

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